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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,146	02/02/2004	Masao Inoue	WILL.0005	6420

7590 12/13/2005

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EXAMINER

TSAI, SHENG JEN

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/768,146		INOUE ET AL.	
	Examiner		Art Unit	
	Sheng-Jen Tsai		2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 11 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 4 is/are rejected.
- 7) ☒ Claim(s) 5-10 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is taken in response to Applicants' Amendment and Remarks filed on November 23, 2005 regarding application 10/768,146 filed on February 2, 2004.

2. Claims 1-15 are pending in the application under consideration.

Claims 4-10 and 12-14 have been amended.

Claims 1-3 and 11 have been cancelled.

3. ***Response to Remarks and Amendments***

Applicants' remarks and amendments have been fully and carefully considered. In response to the amendments, a new ground of claim analysis based on a reference previously relied on (Minowa et al., US Patent Application Publication 2003/0221070) has been embarked. Refer to the corresponding sections of the claim analysis for details.

Claim Objections

4. Claims 5-6 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 5 depends from claim 4. Claim 4 recites the limitation "the maintenance control unit restores the storage structure information stored in the second control memory," which implies that whatever information previously stores in the failed second control memory is completely brought back to its original condition. According to the definition by American Heritage College Dictionary, the word "restore" means "to bring

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back to an original condition." However, claim 5 recites that "the maintenance control unit partially restores the storage structure information stored in the second control memory." The "partial original condition" recited in claim 5 does not inherit and further limit the "full original condition" recited by claim 4, hence claim 5 is of improper dependent form.

Claim 6 is objected by virtue of its dependency from claim 5.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Minowa et al. (US Patent Application Publication 2003/0221070).

As to claim 4, Minowa et al. disclose a **disk array device** [Storage System (title); figure 1] **comprising:**

Channel adapters which control exchange of data with host apparatuses [channel control unit, figure 1, 110];

Disk adapters which control exchange of data with storage devices [disk control unit, figure 1, 130];

Cache memory packages which are used by the channel adapters and the disk adapters and have cache memories storing data [cache unit, figure 1, 150];

first control memory packages which are used by the channel adapters and the disk adapters and have first control memories storing management information which is used for controlling the operation of the disk array device [the corresponding first control memory unit is the cache memory unit, figure 1, 150; paragraph 0044]; and

second control memory packages which are used by the channel adapters and the disk adapters and have second control memories storing storage structure information with regard to a storage structure of the cache memory [the corresponding second control memory unit is the shared memory unit; figure 1, 140; paragraph 0048, 0054-0055; figures 2-3],

wherein the management information is stored in the first control memories [the corresponding first control memory unit is the cache memory unit, figure 1, 150; paragraph 0044], respectively, and multiplexed [by using the cache memory path, figure 1; paragraph 0049], and at least one maintenance control unit [an uninterrupted power supply (UPS) apparatus, figure 1, 500; abstract; paragraph 0007, 0038, 0086] which,

in the case in which a failure has occurred in one of the second control memories [failure caused by the irregularity of the power supply], restores the storage structure information stored in the second control memory in which the failure has occurred, and wherein the maintenance control unit restores the

storage structure information stored in the second control memory, in which the failure has occurred, using a storage area of the first control memories [in the event of trouble with the apparatus or a sudden abnormality in main power supply, configurational information in a volatile shared memory unit is saved into non-volatile magnetic disk apparatuses from the data path via the cache unit by utilizing an uninterrupted power supply apparatus (UPS) (abstract; paragraph 0007, 0038, 0086)].

Allowable Subject Matter

7. Claims 12-14 are allowed.

Claims 7-10 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. ***Related Prior Art***

The following list of prior art is considered to be pertinent to applicant's invention, but not relied upon for claim analysis conducted above.

- Fujimoto et al., (US Patent Application Publication 2004/0153691), "Fault Recovery Method and a Storage Controller in an Information Processing Apparatus."
- Okumoto et al., (US Patent Application Publication 2003/0204683), "Method, System, and Storage Controller for Controlling Shared Memories."
- Abe et al., (US 6,385,114), "Memory Package, Memory System and Hot-Line Insertion/removal Method Thereof."

- Cochran et al., (US Patent Application Publication 2005/0097132), "Hierarchical Storage System."
- Cochran et al., (US Patent Application Publication 2004/0267959), "Storage System with Link Selection Control."

Conclusion

9. Claims 4 is rejected as explained above.

Claims 5-6 are objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 12-14 are allowed.

Claims 7-10 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheng-Jen Tsai whose telephone number is 571-272-4244. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheng-Jen Tsai
Examiner
Art Unit 2186

December 2, 2005


PIERRE BATAILLE
PRIMARY EXAMINER
10/09/05